Walking the ethical tightrope between science and policy: responsible communication of scientific research to policy-makers

Franca Davenport, Science for Environment Policy, University of the West of England

Introduction

There is increasing recognition that policy-makers need to be provided with the latest and best scientific evidence to ensure policy is better informed. However the dialogue between science and policy is not straightforward, nor free of conflict (JRC and AAAS, 2010). Researchers may feel a lack of reception from policy-makers for their work, whilst policy-makers may fail to identify relevance in research unless it is highlighted for them (Stone, 2002). This emphasises the importance of good communication and the role of knowledge brokers in this field (Holmes & Clarke, 2008).

Science for Environment Policy (SfEP) is a weekly electronic news alert targeted at policy-makers across the EU. It disseminates environmental research to 14,000 subscribers and is financially supported by the European Commission. The project has recently expanded to include two new publications that cover emerging, multi-disciplinary and sometimes controversial areas of research such as Biodiversity and Health, Plastic Waste and Green Infrastructure. As such, they require communication of research that is accessible to policy-makers but also faithful to its scientific roots.

An action research project was initiated to develop these multifaceted publications and explore the process of responsible science communication to policy-makers. The metaphor of an ‘ethical tightrope’ is used to describe the experience science communicators can face when finding the balance between communicating research in a format that will have an impact on policy, whilst maintaining its scientific objectivity and meticulousness.

The research used the new SfEP publications as a platform to conduct in-depth interviews with both scientists (n = 6) and EU policy-makers from DG Environment (n = 6). Participants were asked about the use of research in policy-making, the qualities that make research valuable to policy and the advantages and disadvantages of using a professional science communication service.

Results

Policy-makers appear to use research at several stages of policy-making from informing new policy (e.g. green papers, communications, etc.) to supporting the implementation of existing policy (e.g. technical guidelines for Member States) (Davenport et al. 2010). To some extent this agrees with the European Environmental Agency’s (EEA) framework of research in the policy cycle (see Figure 1), which proposes research is used in issue framing, ex-ante impact assessment, policy development, implementation and ex-post evaluation. However, unlike the EEA framework, the responses in this study suggest that research is rarely used in the
issue identification’ stage of the policy cycle. As one policy-maker said, “It is very rare that science will dictate the policy cycle. The policy cycle exists and then you are looking for the science to feed into it.” Policy-makers do report using research to raise awareness and trigger stakeholder consultation but this is more to prioritise a policy area over others rather than put it on the agenda.

The interviews indicate that policy-makers expect a lot from science. As one interviewee said, they want “a digestible but exhaustive and complete and accurate holistic picture, concerning a specific policy question... And it needs to be objective”. Policy-makers want research to be accurate and robust. They want to be sure that research uses proven methods and that the findings are supported by previous research.

Quantitative data is highly valued, particularly efficiency measures, costs and benefits and figures that relate to targets and risks. However, they also appreciate data to be brought to life through relevant case studies and practical examples. A number of respondents mentioned that they want a scientific underpinning of their work, which begs the question of whether science is used to support existing policy or to inform policy choice. Across the board policy-makers want research that can be understood and applied in a short amount of time.

The researchers in the sample tend to see science as performing a watchdog role over policy. As one interviewee said it should have ‘a permanent control on how policy is doing its job’. In the field of the environment it does this by producing models to inform decision-making, developing indicators and targets to measure good environmental status and providing pragmatic research on practical programmes. They believe policy-makers want research that is accurate, reliable and relevant, providing key results and quantitative data.
The researchers also appreciate that policy-makers require an understandable, accessible message. This recognition of the need for accurate, quantitative and accessible data is in line with the policy-makers’ responses. However, the scientists in the sample also believe policy-makers would prefer science to be without extreme results or large amounts of uncertainty and that, for science to be influential, it should fit the current policy agenda and policy drivers as well as the legislative policy cycle.

Amongst both the scientists and policy-makers there is awareness that the process of adapting research findings or the research process to meet policy needs could involve several potential risks. These are explored in the following section.

The balancing act of communicating science to policy-makers

Below is a preliminary list of possible risks that could be encountered when communicating scientific research to policy-makers and some general suggestions on how to minimise them.

- **Taken out of context** – Figures can be quoted out of context, research findings generalised or the message can be altered along the communication chain. For example research on Green Infrastructure has shown that eco-ducts or green bridges improve wildlife movement, but this result has sometimes been interpreted as indicating an improvement in biodiversity, which is not necessarily the case. This risk could be reduced by greater participation and collaboration between scientists and policy-makers. Co-creation and co-ownership of knowledge would hopefully result in a shared responsibility for its application.

- **Selectivity** – By striving to make findings quantifiable science communicators may highlight one part of research at the expense of other. More feedback is needed from policy-makers on how science is used to give researchers and communicators an insight on how to frame quantitative data.

- **Handling uncertainty** – If uncertainty is communicated it can be used to deny the implications of scientific research, especially if they are costly. However, without proper communication of uncertainty, science can be misinterpreted or used too ‘certainly’. For example there is a high level of uncertainty around the toxic impact of micro-plastics (miniscule pieces of plastic) and this uncertainty is mainly because it is a new area of science and difficult to scale laboratory findings to a global level. However, although the findings are accompanied by a degree of uncertainty, they still need consideration by policy-makers. The message from both policy-makers and researchers is that neither can shirk the responsibility of communicating or hearing about uncertainty. There needs to be better ways to communicate and define uncertainty, both in terms of where it is produced and what impact is has on results. Again this requires more dialogue.

- **Taking action** – Along similar lines there is a risk that action may be taken before all the relevant science is known but, if it isn’t taken, then the situation may worsen, especially in terms of climate change and biodiversity loss. This means science communicators have to be careful about how they convey the importance of findings and severity of problems. They need to relate it to previous research findings and to research in other academic disciplines.
• **Getting caught in the middle** – Science could get caught between policy sectors and, as one policy-maker said, used as “a power instrument”. This in turn can mean scientists may start playing different roles such as facilitators and mediators or, in extreme, lose objectivity and become more like lobbyists. As such there is a need to be aware and explicit of the roles people are playing: scientists need to remain scientists and policy-makers need to remain policy-makers. To ensure this occurs, it may be appropriate to use knowledge brokers or science communicators in meetings with policy-makers and scientists.

• **Missing important questions** – In situations when public opinion is ahead of science there is the potential for policy and science to be too driven by public opinion. This could mean that science misses out important questions. For example, Green Infrastructure and the notion of connected green areas is a concept that seems intuitively right and is understood by the public, but the supportive science is not that strong. It could be that important questions are not asked because it just seems “the right thing” to do. More collaboration is needed from an early stage, in particular to ensure that the appropriate policy questions are in place from the start. This may require dialogue between different policy sectors. As one policy-maker said: “We are aware of importance of integration – the theory of it – but there’s still an enormous inertia to get it into practice.”

**References**


Joint Research Council (JRC) and American Association for the Advancement of Science (AAAS), (2010). Evidence-based policy versus policy-biased evidence: the challenge of feeding scientific advice into policy-making. *Conclusions of the High-level Trans-Atlantic Science for Policy Workshop*.